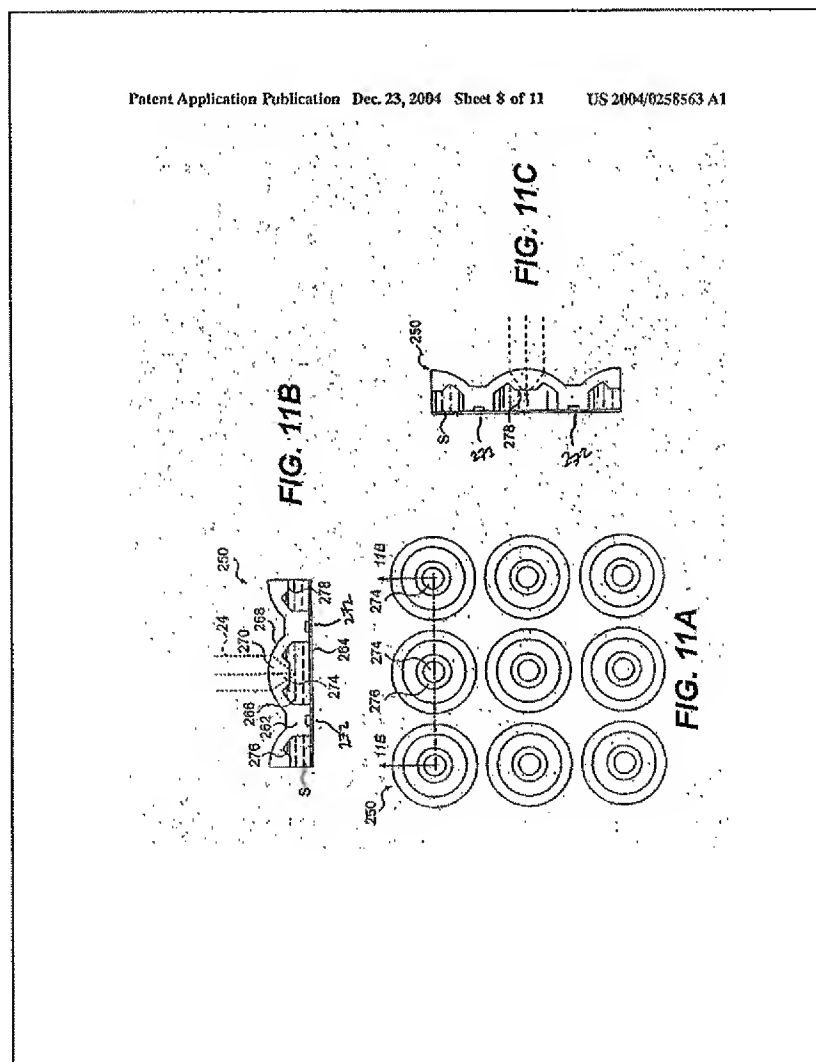


Amendments to the Drawings:

The attached sheet of drawings includes changes to **FIGS. 11A-11C**. This sheet, replaces the original sheet including **FIGS. 11A-11C**. In **FIGS. 11B** and **11C**, reference element **272** is included to point out the existing feature in the previously referenced drawings. The figure included below is annotated to highlight the change. A replacement sheet is included with this Response in the appendix.



REMARKS

Formal Matters

Amendment to the specification has been made to insert new paragraph 38 to include a description for **FIG. 18**, and to amend current paragraph 38 to reflect the description for **FIG. 19**. Support for the amendment for **FIG. 18** can be found, for example, but not limited by, current paragraph 99. Support for the amendment for **FIG. 19** can be found, for example, but not limited by, current paragraph 77. Paragraph 82 has been amended to correct reference to the appropriate drawing. Additionally, current paragraphs 82 and 83 have been amended to reflect the changes made to the drawing sheet 8, in which **FIGS. 11A-11C** are presented, as will be discussed below.

A new drawing sheet has been added for **FIGS. 11A-11C**, with reference element **272**, connoting the flow paths of embodiments of a microcard shown in **FIGS. 11A-11C**. Support for the amendment can be found in, for example, but not limited by, paragraphs 82 and 83, which have been amended accordingly.

Claims 19-26, 38-42, and 46-53 are pending in the instant application. Claims 47, 48, 50, 52 and 53 have been amended. Support for the amendment of Claim 47 can be found in, for example, but not limited by, paragraphs 82 and 83, as well as **FIGS. 11A-11C**. Claims 48 and 52 have been amended to reflect the amendments made to Claim 47. Claims 50 and 53 have been amended to reflect proper antecedent basis. Claim 54 has been added. Support for newly added Claim 54 can be found in, for example, but not limited by, paragraph 83. Claim 49 has been cancelled without prejudice or disclaimer.

For the amendments made in the specification, claims, and drawing sheet, as given in the above, support has been cited for the changes made. Accordingly, to new matter has been added.

In view of the following remarks, Applicants respectfully request reconsideration of Claims 19-26, 38-42, and 46-48, and 50-54, the only claims under examination in the instant application.

Claim Rejections- 35 U.S.C. § 103(a)

In the Office Action dated March 6, 2008, the Examiner rejected independent Claims 19 and 47 of the instant application under 35 U.S.C. § 103(a) as allegedly obvious over newly cited reference Pham et al. (US 6,171,780; hereafter Pham) in combination with previously cited references that include Gilby, et al. (US 6,239,871; hereafter Gilby), Schroeder, et al. (US

5,355,215; hereafter Schroeder), and Claytor (US 4,787, 722), as well as newly cited reference Igarashi (US 5,083, 223),

In making the rejection of independent Claim 19, on page 4 of the Action, the Examiner asserted that every element of independent Claims 19 can be found in Pham, with the exception of an aplanatic lens element. For that element, the Examiner turns to Gilby and Igarashi.

It is stated in the M.P.E.P § 2142 that regarding establishing a *prima facie* case of obviousness post KSR, the following criteria must be met:

"The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR International Co. v. Teleflex Inc., 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also KSR, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval)."

The Applicants respectfully affirm that the combination of Pham and Gilby teaches away from embodiments of a microcard of Claim 19. Further, the Applicants respectfully submit that the statements made by the Examiner regarding Pham in view of Igarashi fail to provide any rational underpinning to support the legal conclusion of a *prima facie* case of obviousness.

In the Action, the Examiner states that Pham discloses a multi-well plate comprising a lens formed in the bottom of each well, and cites FIG. 1B. The Applicants respectfully submit that this is a misrepresentation of the teachings of Pham. In FIG. 1B, reference element 12 is an optically opaque area, while reference element 13 is described as a high transmission portion, not as a lens portion.

In Col. 14, line 9, Pham states, "...the bottom, or portion thereof, can be used to form a lens." However, the Applicants respectfully aver that it is a mischaracterization of Pham to construe a single line in Pham as rising to a teaching, as there is no further mention in Pham of a lens of any type. Moreover, in Col. 14, lines 23-25, with respect to the bottom 11 (FIGS. 1A and 1B) Pham teaches (underline added for emphasis), "...If the bottom is not substantially flat, then the optical quality of the bottom and wells can decrease because of the altered optical and physical properties of one or both." Further, in all of the examples given of characterization of intact multi-well platforms taught in Pham (Examples 5-8), all are described as having a bottom that is substantially flat. In contrast, embodiments of microcards of Claim 19 have a well lens corresponding to a sample chamber, not simply a high transmission portion corresponding to a

sample chamber. Embodiments of the well lens of Claim 19 include a rounded portion and a projection opposing the rounded portion that extends into the sample chambers. As such, Pham clearly teaches away from embodiments of microcards of Claim 19 of the instant application.

Further, Gilby does not overcome the deficiency of Pham to teach embodiments of a microcard of Claim 19 of the instant application with a plurality of well lenses that have a rounded portion and a projection that extends into the sample. As asserted in previous Responses, the Applicants maintain that Gilby teaches the use of a hyper-hemispheric or hemispheric lens piece external to a capillary or cell. The externally positioned lens is in proximity to the exterior of a capillary or cell, and therefore neither formed in the microcard, nor in contact with the sample. Moreover, the combination of Pham, which teaches a multi-well device with a flat-bottomed plate having a high transmittance portion, and Gilby, which teaches externally positioned lens, teaches away from embodiments of a microcard of Claim 19. Embodiments of a microcard of Claim 19 of the instant application have a plurality of well lenses formed in the microcard, where embodiments of microcard lenses have a rounded portion and an opposing projection that extends into the sample.

With respect to the Examiner's statements concerning the combination of Pham and Igarashi, in the Action, the only statement made concerning Igarashi is that Igarashi discloses a plano-convex lens, and concludes that (parenthetical statement added for clarity), "...In light of the disclosure of Igarashi, it would have been obvious to one of ordinary skill in the art to make the lens of the multi-well plate (of Pham) plano-convex in shape since plano-convex lenses are aplanatic."

First, as previously discussed in the above, the Applicants maintain that the teaching of Pham has been mischaracterized, and does not teach a microplate having a lens at the bottom of each well. In contrast, Pham teaches a multi-well device with a flat-bottomed plate having a high transmittance portion. Additionally, the teaching of Igarashi is for a lens system for endoscopes, bronchoscopes, and similar scopes. The lens system has a wide field angle and small inclination angles, which make such a lens system desirable for the intended use with scopes having a very small diameter, such as an endoscope. The lens system includes a first lens component and a second lens component that is arranged on the image side of the first lens component with an airspace interposed between the two lens components. The Applicants respectfully submit that there is no reasoning given with some rational underpinning for how one of ordinary skill in the art would be inspired to combine the multi-well device with a flat-bottomed plate having a high transmittance portion of Pham with the lens system for an endoscope of Igarashi to arrive at the embodiments of a microcard of Claim 19.

For the reasons given above, the Applicants submit that with respect to the cited references of Pham in view of Gilby and Igarashi, no *prima facie* case of obviousness has been established for embodiments of a microcard of Claim 19. For at least the same reasons, no *prima facie* case of obviousness has been established for claims that depend on Claim 19. Accordingly, the Applicants respectfully request that the rejection of independent Claim 19, as well as dependent Claims 20-23, 25, 26, 38, 40-42, and 36 be withdrawn.

In making the rejection of independent Claim 19 on page 5 of the Action, the Examiner asserted that every element of independent Claims 19 can be found in Pham, with the exception of a Fresnel lens element. For that element, the Examiner turns to Schroeder in view of Claytor.

The Applicants respectfully affirm that the combination of Pham and Schroeder teach away from embodiments of a microcard of Claim 19. Further, the statements made in the Action regarding Pham in view of Schroeder as evidenced by Claytor emphasize the lack of articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

First, as previously discussed in the above, Pham teaches a multi-well device with a flat-bottomed plate having a high transmittance portion, and not a microplate comprising a lens at the bottom of each well. Schroeder teaches methods and apparatuses of detecting fluorescence from the well bottoms of wells in a multi-well plate. In addition to the positioning of the source and detector to minimize background fluorescence and cross-talk, Schroeder teaches the use of a sheet-like illumination control element, and gives as examples a mask, a holographic optical element (HOE), or a Fresnel lens (e.g. element 30 of Fig. 4 or element 50 of Fig. 5). The Applicants respectfully submit that such a sheet-like illumination control element is clearly taught as an element that is external to the sample wells of a multi-well plate, and part of the optical system. Accordingly, the sheet-like illumination control element taught by Schroeder, i.e. holographic element, HOE, or Fresnel lens, is not part of the multi-well plate of Schroeder. This is in contrast to embodiments of a microcard of Claim 19, which embodiments have a plurality of well lenses formed in a microcard, said well lenses having a rounded portion and an opposing projection that extend into the sample. Therefore, the combination of Pham, which teaches a flat-bottomed plate having a high transmittance portion, and Schroeder, which teaches a sheet-like illumination control element that is external to a multi-well device *teaches away* from embodiments of a microcard of Claim 19.

The Applicants further submit that the conclusory statement made in the Action that it would have been obvious for one of ordinary skill in the art to use a Fresnel lens as taught by Claytor in embodiments of a microcard of Claim 19 is unsupported. It is neither necessary nor sufficient for an aplanatic lens to be a Fresnel lens. Contrary to such a conclusory statement,

many aplanatic lenses are, for example, plano convex, plano concave, and meniscus-shaped. The addition of the conclusory statements in the Action with respect to Claytor serves to emphasize hindsight reasoning constructed on a combination of carefully selected elements taken from art, without supplying an articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Accordingly, the Applicants submit that with respect to the cited references of Pham in view Schroeder as evidenced by Claytor, no *prima facie* case of obviousness has been established for embodiments of a microcard of Claim 19. For at least the same reasons, no *prima facie* case of obviousness has been established for the claims dependent on Claim 19. Accordingly, the Applicants respectfully request that the rejection of Claims 19 and 39 be withdrawn.

In the Action, the Examiner rejected independent Claim 47 of the instant application under 35 U.S.C. § 103(a) as allegedly obvious over Pham in view of Gilby and Bjornson, et al. (US 2002/0092767; hereafter Bjornson).

The Applicants respectfully submit that the combination of Pham with either Gilby or Bjornson teaches away from embodiments of the microcard of Claim 47.

The Applicants respectfully aver that remarks previously made regarding the allegedly obviousness of Claim 19 over Pham in view of Gilby are applicable to the rejection made for Claim 47. In summary, Pham teaches a multi-well device with a flat-bottomed plate having a high transmittance portion, and not a microplate comprising a lens at the bottom of each well. Gilby teaches the use of a hyper-hemispheric or hemispheric lens piece external to a capillary or cell. The externally positioned lens is in proximity to the exterior of a capillary or cell, and therefore not formed in a first member of a microcard. Accordingly, the combination of Pham, which teaches a multi-well device with a flat-bottomed plate having a high transmittance portion, and Gilby, which teaches externally positioned lens, teaches away from embodiments of a microcard of Claim 47. Embodiments of a microcard of Claim 47 of the instant application have a plurality of well lenses formed a first member of a microcard, where embodiments of lenses formed in the first member are aplanatic.

In the Action, the Examiner asserts that Bjornson teaches a microplate comprising an array of wells. The Applicants aver that this is a mischaracterization of Bjornson. There are a large variety of microfluidic devices, having designs for that are suited for specific uses, which would not be found to be suitable for other uses. The Applicants respectfully submit that the microfluidic device taught by Bjornson has a primary flow path, and a secondary flow path, each of which has a reservoir. Bjornson teaches that the intersecting column design is suited for

sample separation, as pointed out by the Examiner. The Applicants respectfully aver that those of ordinary skill in the art of bioanalysis would recognize a difference between a microcolumn device and a microwell device. Further, the separation column of the device taught by Bjornson has a detection zone. The Applicants respectfully submit that the detection zone in a microcolumn device is not a lens formed in a first member of a microcard device. Further, and most importantly, the Applicants affirm that Bjornson specifically teaches that in order to detect samples separated in the subject microcolumn device, that such a device must be integrated into an optical system. The lenses taught by Bjornson are lenses in an optical system, which lenses are positioned external the microcolumn device of Bjornson, and not integrated into the microcolumn device (see columns 45 and 46 of Bjornson).

Accordingly the combination of Pham and Bjornson teaches away from embodiments of the microcard of Claim 47 of the instant application. Pham teaches a multi-well device with a flat-bottomed plate having a high transmittance portion, and *not* a microplate comprising a lens at the bottom of each well. Bjornson teaches a microcolumn device having a detection zone, where any lenses required for detection are external the microcolumn device in an optical system. In contrast, embodiments of a microcard of Claim 47 of the instant application have a plurality of well lenses formed a first member of a microcard, where embodiments of lenses formed in the first member are aplanatic.

For the reasons given above, the Applicants submit that with respect to the cited references of Pham in view of Gilby and Bjornson, no *prima facie* case of obviousness has been established for embodiments of a microcard of Claim 47. For at least the same reasons, no *prima facie* case of obviousness has been established for claims that depend on Claim 47. Accordingly, the Applicants respectfully request that the rejection of independent Claim 47, as well as dependent Claims 48 and 50-54 be withdrawn.

CONCLUSION


The Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this case, the Examiner is invited to contact me at the telephone number listed below.

Fee Authorization

Should any extension of time and/or fee be necessary for the timely submission of this paper, such extension of time is hereby requested, and the Commissioner is hereby authorized to charge **Deposit Account No. 01-2213 (order no. 4847)**. Any deficiency or overpayment should be charged or credited to this deposit account.

Respectfully submitted,

Date: June 9, 2008



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